



PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

CHANDLER E. WOODCOCK
COMMISSIONER

Comments - Environmental Permit Review Maine Department of Inland Fisheries and Wildlife

Inland Fisheries and Wildlife Division Comments

Bureau of Resource Management Comments – Region C

Applicant's Name: Hancock Wind, LLC (Contact: Brooke Barnes, Stantec)

Project #: L-25875-24-C-A

Regulatory Agency: MDEP

Project Type: Windpower Facility

Project Manager: Maria Lentine-Eggett

Comments Due Date:

Date Comments Sent: August 11, 2014

Project Location

Towns: Osborn/T16 MD/T22 MD

County: Hancock

Waterbodies:

Biologists (review coordinators): Bethany Atkins, John Perry, Bob Stratton

Biologists (Fisheries Division): Greg Burr

Biologists (Wildlife Division): Danielle D'Auria, Lisa Bates, Erynn Call, John DePue, James Hall, Shawn Haskell, Tom Hodgman, Tom Schaeffer, Beth Swartz, Charlie Todd

After review of the application and consideration of the proposal's probable effect on the environment, and on our agencies programs and responsibilities, we provide the following comments:

Project Description: The Hancock Wind Project (project) is an 18 turbine wind energy project located in Osborn, T22 MD, and T16 MD in Hancock County. The project was originally permitted by the Maine Department of Environmental Protection (MDEP) on July 22, 2013. The original permit allowed for 2 turbine designs—either the Vestas V112 or Siemens 3.0-113 machines, each with a 3.0-megawatt (MW) rated power. The Vestas V112 turbines would be on 94-meter towers with a 112-meter rotor diameter, for a total height, with the blade fully extended, of 150 meters (492 feet). The Siemens 3.0-113 turbines would be on 99.5-meter towers and have a 113-meter rotor diameter, for a total height of 156 meters (512 feet).

This amendment application requests the option of using a third turbine, the Vestas V117, 3.3-MW turbine. The Vestas V117 has a 117-meter rotor diameter and a tower height of 116.5 meters with a total turbine height of 175 meters (574 feet) with the blade fully extended. While the Vestas V117 has a higher tower height for the turbines, the use of this option eliminates the turbine closest to Spectacle Pond on Spectacle Pond Ridge, resulting in a total of 17 turbines instead of 18 turbines. If this turbine option is chosen for construction, Turbine 05 in T22MD would not be constructed. In addition, the proposed temporary and permanent meteorological towers would increase in height and clearing for guy wires to match the new hub height, 116.5 meters.

It is the understanding of MDIFW that there are no other changes to the turbine pad size, access roads, or other aspects of the permitted civil design resulting from use of the Vestas V117 turbine option, and there will be no additional resource impacts.

Consultation summary: The Applicant introduced the amended project design to MDIFW during a June 2, 2014 meeting on a separate wind power project. The concept of the amended project was described, and at the time MDIFW provided very preliminary comments on the scope. Since that time there has been at least one follow-up conversation between Stantec (Brook Barnes) and MDIFW (John Perry) discussing curtailment for bats, as well as post-construction monitoring for birds.

Comments/Recommended Considerations or Conditions

Vulnerable bat species: The original Hancock Wind Project permit called for curtailment for the protection of bats such that turbines would only be operated at wind speeds exceeding 5.0 meters per second. Since that time, MDIFW has initiated rulemaking to consider three *Myotis* species to Maine's list of threatened and endangered species. However, the possible listing of these three species does not lessen our concern for our other five resident bat species, four of which are currently listed as Special Concern in Maine. Cave bats in Maine continue to be decimated by White Nose Syndrome, with catastrophic declines in wintering populations of 95-99%. The few surviving bats that are potentially resistant to the disease likely comprise the only potential to rebuild these populations. These bats, along with our other resident species, continue to face increasing threats from expanding wind energy development in Maine. In light of already catastrophically reduced populations, wind energy continues to adversely impact Maine's bat populations in the view of this Agency, necessitating proactive and protective siting and operational measures.

In response to the plight of Maine's bat species, MDIFW has revised its curtailment policy to wind speeds of *at least* 6 meters per second. This standard is subject to future change with State or Federal listing of bats as well as new insights on bat population declines and regional guidance for the wind industry in the Northeast. The curtailment standard at a minimum of 6 meters per second is consistent with MDIFW's recommendation for all new and significantly modified wind projects since October 2013, and was first relayed to this Applicant in June 2014 upon disclosure of the proposed project modification. This site is of particular concern because of its proximity to the adjacent Bull Hill Wind Project, at which the highest documented number of little brown bat mortalities for any wind project in Maine to date was observed during post-construction monitoring.

MDIFW's recommendation for Curtailment Requirements to Decrease Bat Mortality is as follows:

Wind turbines will operate only at cut-in wind speeds exceeding 6.0 meters per second each night (from at least ½ hour before sunset to at least ½ hour after sunrise) during the period April 20 – October 15. Cut-in speeds are determined based on mean wind speeds measured at hub heights of a turbine over a 10-minute interval. Turbines will be feathered during these low wind periods to minimize risks of bat mortality. These cut-in speeds are independent of ambient air temperature.

Post-construction Monitoring for Birds: The July 2013 Hancock Wind Project permit contained no condition for the post-construction monitoring for birds. This was likely an oversight given that if a

project is curtailed, we have not been requiring direct post-construction monitoring for *bats*. However, post-construction monitoring for *avian* mortality has been a consistent recommendation by MDIFW for all wind power projects in Maine. Therefore, MDIFW offers the following recommendations as they pertain to post-construction monitoring for birds. Note that while we are not requiring direct post-construction monitoring for bats, all observed bat carcasses shall be documented and reported to MDIFW during the course of the bird carcass monitoring. All post-construction monitoring plans shall be submitted to MDIFW for review and final approval prior to implementation:

Post-Construction Monitoring

1. Daily mortality searches must be conducted during peak migration periods (tentatively April 15 - June 1 and August 1 – October 15, subject to slight adjustment in response to new data) during years 1, 2, and 3 of project operation.
2. At least nine (9) turbines at the project shall be searched.
3. Radar shall be used concurrently with mortality searches in years 1, 2, and 3 of project operations to collect data for use in correlating observed mortality with nightly passage rates. Radar studies shall be conducted at times that maximize nightly data collection.
4. Records shall include weather and turbine operation variables.
5. Carcass persistence trials shall be used to provide corrections for searcher efficiency and scavenger removal rates.
6. Post-construction raptor migration surveys shall be conducted (see below).
7. A fourth year of mortality monitoring during years 4 - 6 of operations may be required based upon initial findings. Any changes to monitoring techniques in the fourth year shall be submitted to MDIFW for review and final approval prior to implementation.

Raptors: Specific to raptors, MDIFW requests clarification for the following:

1. Data are reported as a percentage of raptors observed in the project area, and below turbine height at Hancock and Bull Hill, where the project area is defined as those locations within the study area where turbines are being proposed, and the study area is the airspace visible from the observation point. It was stated that the study area incorporates the following: “The observation location had an unobstructed 360-degree view of the surrounding airspace. Spectacle Pond, Spectacle Pond Ridge, Schoppe Ridge, Bull Hill, Little Bull Hill, the Southeast String and the airspace over much of the Union River, Pork Brook, Mahanon Brook, and Hopper Brook all were visible from the observation location.”
 - a. What is the radius (m) of the study area? Please include delineated area on study map.
 - b. Can an observer accurately and consistently determine raptor flight height within the described study area?

- c. Were multiple observers used to conduct raptor surveys and what quality control training measures were used to maintain and test consistency in flight height estimation?
 - d. Is flight height recorded upon first observation of a raptor?
 - e. How is the observer able to accurately distinguish areas where turbines are proposed within the airspace?
 - f. The area the observer is able to accurately distinguish flight height is presumably a small fraction of the overall project footprint. Because of the limited sample size both in the spatial and temporal context (see subsequent comment), flight height data provided may have limited utility in characterizing exposure to turbines for raptors.
2. Exhibit 7 provides data on the percent of raptor observations in the project area and below two different turbine heights as observed during raptor migration surveys at Hancock and Bull Hill.
- a. Aren't these data from the study area not the project area? Please clarify.
 - b. Reporting a vertical height range to represent the rotor swept area, instead of a single value (156 m or 175 m) would better represent potential risks to raptors in terms of habitat loss (avoidance) and collision.
 - c. Please provide the percentage of raptors observed in the study area, below, within, and above the rotor swept-area.
 - d. Complete flight height data should be reported including mean and variance for each species (not just pooled average minimum flight height) to fully understand raptor flight patterns and potential risks.

Due to our concerns with potential impacts to raptors, MDIFW recommends that post-construction raptor migration surveys should be conducted in conjunction with the avian PCM. This data will be used to compare with pre-construction raptor migration results to assess if changes in patterns have occurred as a result of this project. MDIFW recommends a minimum sampling framework for raptor nest and raptor migration surveys based upon the best available science, which was not represented as part of the Bull Hill or Hancock raptor migration surveys and thus does not adequately document the potential risk to breeding and migrating raptors.

All other MDIFW recommendations and conditions on the original Hancock Wind Project permits (L-25875-24-A-N and L-25875-TF-B-N) shall apply to this permit amendment.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,



John Perry
Environmental Review Coordinator